MAT139 – Álgebra Linear para Computação
Respostas da Lista de Exercícios 7

1. (a) $\det(2A) = 2^n \det A$; (b) $\det(-A) = (-1)^n \det(A)$; (c) $\det(A^2) = (\det A)^2$.

2. (a) 0; (b) 16; (c) 16; (d) $\frac{1}{16}$ (e) 16.

3. ± 1.

5. (a) F; (b) F; (c) V; (d) V; (e) F; (f) F.

6. $\det A = \det(A^t) = \det(-A) = (-1)^n \det A = -\det A$.

7. 0

8. 1

9. $D_n = D_{n-1} - D_{n-2} = (D_{n-2} - D_{n-3}) - D_{n-2} = -D_{n-3} = D_{n-6} = D_{n-6k}$, logo
$D_{1000} = D_{1000-6\cdot166} = D_4 = -D_1 = -1$.

10. As três primeitas colunas têm que ser LD.

12. (a) e (b) 2

13. (a) $x_1 = -1$, $x_2 = 5$; (b) $x_1 = \frac{d}{ad-bc}$, $x_2 = \frac{-c}{ad-bc}$.